

**U.S. ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF AIR AND RADIATION
OFFICE OF MOBILE SOURCES**

**ON-BOARD REFUELING VAPOR RECOVERY
POSSIBLE STAGE II REFUELING INCOMPATIBILITIES**

FACT SHEET

This fact sheet discusses possible problems with fueling certain 1998 model year cars equipped with onboard refueling vapor recovery (ORVR) and the stage II vapor recovery systems that might be involved.

In 1994, EPA published regulations that require vehicles to capture vehicle refueling emissions. These regulations require that forty percent of 1998 passenger cars meet ORVR emission standards. Eighty percent of 1999 model year cars and 100 percent of 2000 and later model year cars must meet ORVR requirements. When fully phased in, ORVR regulations will reduce volatile organic compounds (VOCs) and toxics by approximately 300,000 to 400,000 tons per year nationwide. VOCs are a major cause of urban ozone, or smog.

In a test program, EPA and the California Air Resources Board (CARB) learned that certain ORVR vehicles were experiencing premature shut off of Stage II nozzles during refueling. The test program identified three vehicle/nozzle incompatibilities wherein the nozzles prematurely shut off during the refueling event. The nozzle manufacturers involved are Healy, Husky, and Saber. The Healy and Husky nozzles are booted vacuum-assist nozzles. The Saber is an electronic non-booted vacuum-assist nozzle.

Service station owners may make the equipment modifications described below to avoid potential refueling problems. These modifications are permitted, but not required under Federal law.

Vehicles and Areas of the Country Affected

EPA anticipates refueling problems could occur on some ORVR vehicles (not all ORVR vehicles) at approximately 1-2 percent of service stations across the country. Only some vacuum assist, Stage II vapor recovery service stations are affected. Balanced Stage II vapor recovery service stations and conventional (non-vapor recovery) service stations are not affected. (See attached map.)

Nozzle manufacturers, service station owners, and automobile manufacturers are working together to assure that ORVR vehicles can be refueled at any service station in the country. EPA anticipates that any refueling inconveniences will be temporary.

Additional Information

EPA established a hotline to handle calls on refueling issues: 313/ 668-4413.

Up-to-date refueling information can also be found on the Internet at EPA's ORVR Internet address (<http://www.epa.gov/OMSWWW/gopher/Regs/LD-hwy/Onboard/>)

Refueling information may also be available from your automobile dealer or by contacting your factory service representative (usually listed in your owners manual).

The following information was provided by nozzle manufacturers:

Healy

Some ORVR equipped vehicles could not be refueled using the Healy 200, 200X, or 400 model nozzles. (Note: Healy model 600 nozzles are not affected.) Consequently, on April 17, 1997, CARB revoked the certification of the Healy Stage II vapor recovery systems that use Models 200, 200(X), and 400 nozzles. Under the terms of that revocation order, service stations may continue to operate those systems until April 17, 2001, however the repair, replacement or supplying parts for these nozzles is prohibited. Healy has engineered fixes for the 200, 200X, and 400 nozzles but the modified nozzles must go through CARB certification before they can be sold. As of August 5, 1997, samples of the modified nozzles had been submitted to CARB, but Healy had not yet begun the operational tests of at least 90 days, which are required for the CARB certification process. The attached Healy flyer discusses options for gasoline stations using these nozzles. Healy contacts: Roger Duhaime, Carl Griffin, and Paul Bauer (603/882-2472).

Saber

Only a very small ORVR vehicle population cannot be refueled using a Saber nozzle. (Note: Saber has very small market share.) A fix for the Saber nozzle may be available in the future, however, Saber is not planning any repairs to their nozzles at this time. Saber indicated that it may be possible to refuel the affected vehicles by slowly initiating the refueling, then gradually increasing flow rate. Saber contact: Dwain Simpson (203/762-9444).

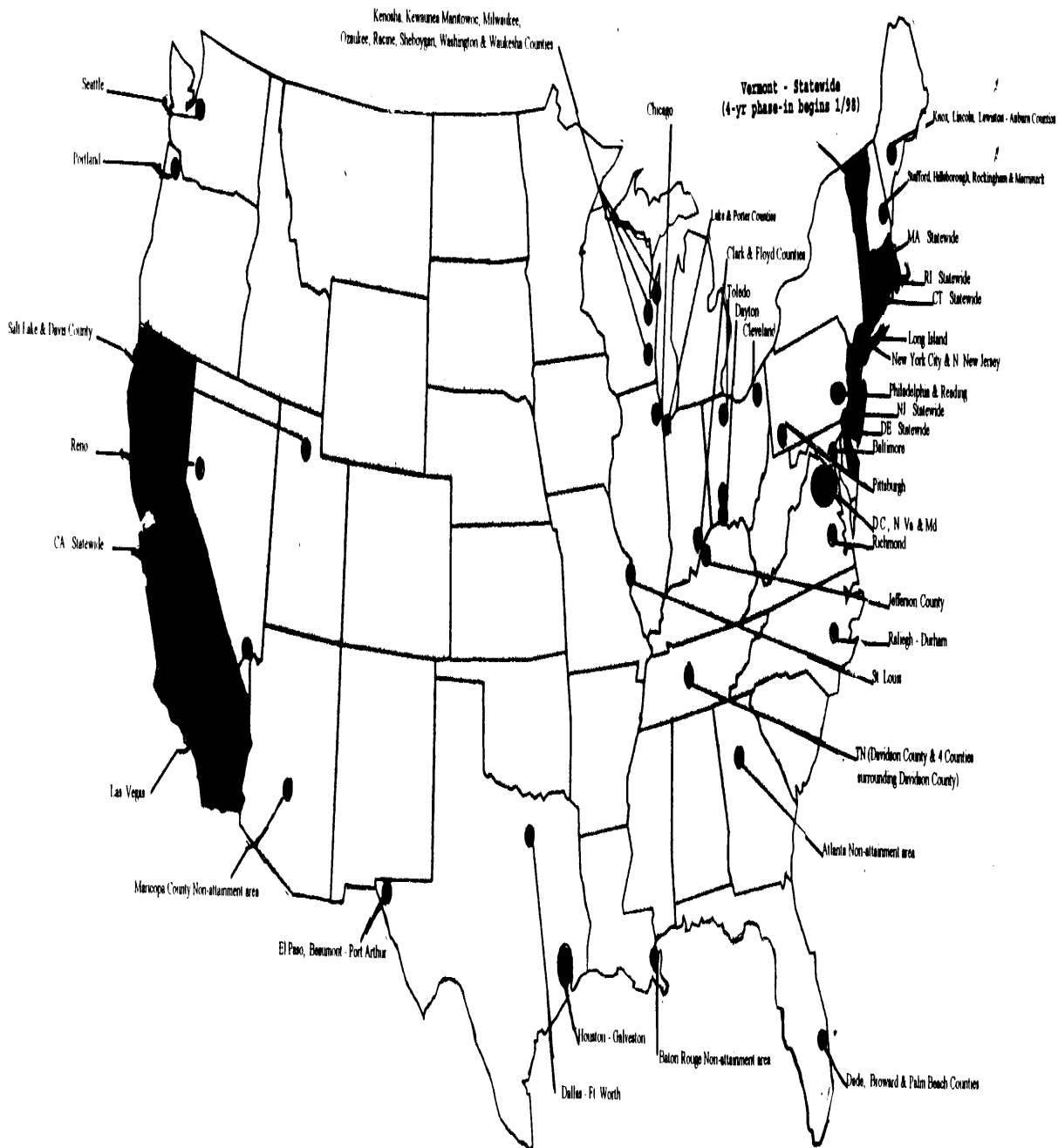
Husky

Some ORVR equipped vehicles could not be refueled using the Husky model V-1 nozzle for AMOCO systems and the model V-34 6250 nozzle for WAYNEVAC and MAXVAC (Tokheim) systems. (Note: Husky makes many other nozzle types and models which are not affected. Only V-1 and V-34 6250 nozzles manufactured prior to March 1, 1997 with serial numbers below 317400 are affected.) Husky established a nozzle modification to make the V-1 and V-34 6250 nozzles compatible with ORVR vehicles and has certified the modification through CARB and Underwriters Laboratory.

As discussed in the attached flyer, the nozzle modification can be accomplished by either replacing the existing vapor splash guard with a new one and installing it as instructed, or by removing the existing vapor splash guard, punching either a 3/8 inch hole or four 3/16 inch holes in the location of the existing 1/8 inch hole and replacing the vapor splash guard in the proper position. **[Caution:** The modification may be performed only on the Husky V-1 nozzle for Amoco systems and the V-34 6250 nozzle for WAYNEVAC and MAXVAC (Tokheim) systems. Do not punch holes in any other boots or vapor splash guards. To do so will interfere with the proper functioning of the nozzle and may be considered tampering.]

Husky customer service representatives may be contacted at 1-800-325-3558 to answer questions regarding the availability of the new vapor splash guard. Husky contacts: Art Fink (314/257-3073 ext. 31) or Ron Brilliant (ext. 38).

Stage II Covered Areas



Enclosure: Notice from Husky Corporation



TECHNICAL REPORT ON ORVR

FIELD MODIFICATIONS FOR V-34 & V-1 VACUUM ASSIST VAPOR RECOVERY NOZZLES

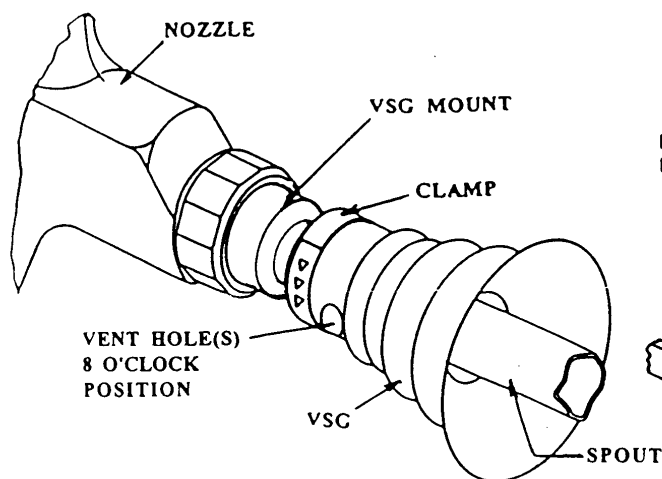
VAPOR SPLASH GUARD (VSG) REPLACEMENT

1. Remove the *low profile ear clamp* securing the old *VSG* to the nozzle body using a pair of side cutters or low profile pincers. Squeeze together the two *ears*. This will release the *rectangular tab hole* from the *fourth tooth*.

2. Slide the *VSG* off the *spout*.

3. Replace old clamp or put a new *clamp* on the new *VSG*. Then slide the *VSG* over the *spout* onto the *VSG mount* with the *hole* in the 8 o'clock position.

4. Rotate the *clamp* until the *ears* are to the lower side of the nozzle. With a *low profile pincers* or a *side cutters*, grasp the two *ears* and squeeze them together until the *rectangular tooth hole* latches over the *fourth tooth*. The *clamp* must be tightened firmly to prevent the *VSG* from rotating.



CARB CERTIFIED



HUSKY CORPORATION ■ 2325 HUSKY WAY ■ PACIFIC, MO 63069
2300 EAST VISTOSO ■ COMMERCE LOOP ■ ORO VALLEY, AZ 85737 FORM NO. 009042

VAPOR SPLASH GUARD (VSG) IN FIELD MODIFICATION

1. The existing *VSG* can be converted to the new ORVR design by using a suitable hole punch (leather punch) to replace the existing 1/8" hole with *four 3/16" holes* or one 3/8" hole.

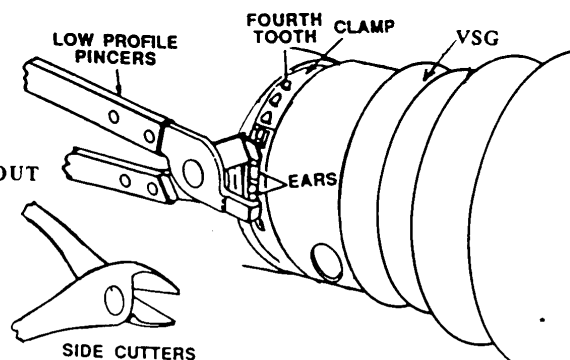
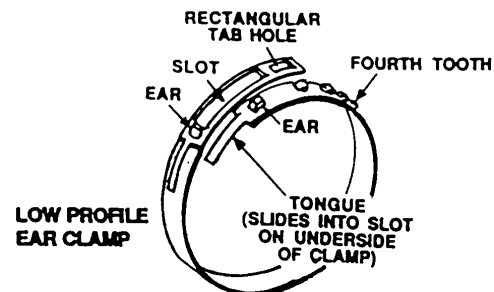
2. Follow replacement instructions. Placing the holes in the 8 o'clock position.



FOUR 3/16" HOLES



ONE 3/8" HOLE



Enclosure: Notice from Healy Systems, Inc.
NOZZLE NEWS

FROM
HEALY SYSTEMS

The California Air Resources Board (CARB) recently issued Executive Order G-70-180 which limits further sales of the Healy System non-ORVR compatible Models 200, 200X (high vacuum) and 400 Nozzles in California. It does not mean that companies which already own any of those types of nozzles cannot use them -- It does require that within four years those nozzles must be upgraded to be compatible with ORVR-equipped vehicles. In most cases those nozzles would be upgraded by their owners as a normal maintenance program. In addition, any nozzles returned to Healy Systems for rebuild after the release of ORVR modifications would automatically have the ORVR capability built in at no additional charge over the cost of normal rebuilding.

CARB took this action as a result of testing recently undertaken to determine the capability of all manufacturers' nozzles with ORVR-equipped vehicles. During the tests the 200, 200X, and 400 Nozzles performed as they were originally designed to - they shut off when they sensed the high vacuum generated during refueling of ORVR-equipped vehicles. Introduction of domestic and foreign ORVR-equipped cars will begin with the 1998 model year. Healy Systems is aware of the noncompatibility and has engineered modifications which will soon be evaluated by CARB, and the reworked nozzles will be recertified.

The success of the current Model 600 Bootless Nozzle is not impacted by the CARB announcement. The popularity of this nozzle in both foreign and domestic markets has exceeded our expectations and, for a while, it exceeded our capacity to supply them fast enough. In many cases, owners of some of the 200(X) Nozzle and all of the 400 Nozzle base might decide to upgrade to bootless 600s immediately, rather than to upgrade their existing units.

For up-to-date information about the testing programs or to discuss upgrading to Model 600s, contact Healy Systems for the name of your nearest Healy distributor or Sales Representative.

HEALY SYSTEMS, INC. · HUDSON, NEW HAMPSHIRE
TELEPHONE (603) 882-2472

Issue Date; April 1997

Enclosure: Notice from Husky Corporation

Technical Report on ORVR
(Onboard Retention Vapor Recovery)
May 16, 1997

Many 1998 ORVR equipped vehicles are not compatible with some existing Vapor Recovery systems! They will not accept gasoline and the nozzle will keep clicking off!

Husky V-34 and V-1 nozzles equipped with a Vapor Splash Guard (VSG) can be modified to eliminate these problems.

The modification consists of installing a new VSG with a larger 3/8" vent hole or by punching four 3/16" holes in existing VSG's. All V-1 and V-34 nozzles shipped after March 1, 1997 with serial numbers higher than 317400 have the 3/8" vent hole in the VSG. These modifications are CARB certified.

The new Husky VSG Part No. 4000 is available at a nominal charge ~om Husky distributors. Installation of a new VSG or field modification of an existing VSG is a simple matter (as shown on the enclosed sheet). Both are CARB certified.

ORVR vehicles accept fuel from Husky conventional, balance, and V-3 vacuum assist nozzles at legal flow rates, without modification.

2300 EAST VISTOSO . COMMERCE LOOP . ORO VALLEY, ARIZONA 85737 · U.S A. .
TEL. (602) 742-3994 . FAX (602) 297-8891

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